

REMARKS

The Office Action is discussed in detail below.

Paragraph numbers refer to the paragraph numbers of the Office Action. Support for the amendments are found the specification as filed. Support for "average" in claims 1, 30 and 90 is found on page 13, line 1 of the specification as filed. No new matter has been added.

Claim Rejections - 35 USC 102(b)Paragraph 3 of Office Action

Claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 are rejected under 35 USC 102(b) as being anticipated by Mesters (U.S. Pat. 4,725,573).

Mesters discloses a catalyst containing metallic copper and nickel as active component carried on an inert refractory carriers. The copper-nickel alloy is present on the carrier in small metal particles. Mesters discloses an average particle size of less than 14 nm (140 Angstroms) in column 11, claim 1. Mesters also discloses that "...it is preferred that the average particle size of the metal particles is less than 12 nm, more preferably less than 10nm and most preferably less than 8nm." (Mesters, column 3, lines 39-42. However, Mesters only provides an example of mean particle size of 11 nm (110 Angstroms) in Table of

column 9. Mesters fails to provide any examples of a metal particulate having an average particle size that falls within the range of between about 10 Angstroms and about 70 Angstroms as recited in applicants' claim 1 (as currently amended). Likewise, Mesters fails to provide any examples of a nickel and/or nickel alloy particulate having a particle size of between about 10 Angstroms and about 70 Angstroms as recited in applicants' claim 30 (as currently amended).

Hence, Mesters fails to teach or suggest all of the limitations of applicants' claimed invention as recited in applicants' claims 1 & 30. The rejection of claims 1 & 30 under 35 USC 102(b) as being anticipated by Mesters is improper and applicants respectfully request the rejection be removed.

Claims 2 and 31 have been canceled. Claims 3-7, 9-10, 15-17, 19-22 & 27-28 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 32-36, 42-44, 47-49 & 53-54 depend from 30 and include all of the limitations of claim 30 as well as additional limitations. Hence, Mesters fails to teach or suggest all of the limitations of claims 3-7, 9-10, 15-17, 19-22, 27-28, 32-36, 42-44, 47-49 & 53-54.

The rejection of claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 under 35 USC 102(b) as being anticipated by Mesters is thus improper and applicants' respectfully request the rejection be removed.

**Claim Rejections - 35 USC 103**

**Paragraph 5 of Office Action**

Claims 8 & 37 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 4,725,573).

Claim 8 depends from claim 1 and includes all of the limitations of claim 1 as well as additional limitations. Claim 37 depends from claim 30 and includes all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Hence, Mesters fails to teach or suggest all of the limitations of claims 8 & 37. The rejection of claims 8 & 37 under 35 USC 103(a) as being unpatentable over Mesters is improper. Applicants' respectfully request that the rejection be removed.

Paragraph 6 of Office Action

Claims 11-14 & 38-41 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 4,725,573), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44 & 53-54 above, and further in view of Ovshinsky et al ("Ovshinsky"), (U.S. Pat. 5,840,440).

Claims 11-14 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 38-41 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Ovshinsky fails to make up for the deficiencies of Mesters, and the combination of Mesters in view of Ovshinsky fails to teach or suggest all of the limitations of claims 11-14 & 38-41. Hence, the rejection of claims 11-14 & 38-41 under 35 USC 103(a) as being unpatentable over Mesters in view of Ovshinsky is improper and applicants respectfully request it be removed.

**Paragraph 7 of Office Action**

Claims 18, 24, 45 & 46 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 3,972,829), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 above, and in further view of Flytani-Stephanopoulos et al ("Flytani-Stephanopoulos") U.S. Pat. 4,729,889.

Claims 18 & 24 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 45 & 46 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Flytani-Stephanopoulos fails to make up for the deficiencies of Mesters, and the combination of Mesters and Flytani-Stephanopoulos fails to teach or suggest all of the limitations of claims 18, 24, 45 & 46. Hence, the rejection of claims 18, 24, 45 & 46 under 35 USC 103(a) as being unpatentable over Mesters in view of Flytani-Stephanopoulos is improper and applicants respectfully request it be removed.

Paragraph 8 of Office Action

Claims 23, 26, 50 & 52 are rejected under 35 USC 103(a) as being unpatentable over Masters (U.S. Pat. 4,725,573), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 above, and in further view of Hatura et al "Hatura" (U.S. Pat. 5,506,273).

Claims 23 & 26 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 50 & 52 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Masters fails to teach or suggest all of the limitations of claims 1 & 30. Hatura fails to make up for the deficiencies of Masters, and the combination of Masters in view of Hatura fails to teach or suggest all of the limitations of claims 23, 26, 50 & 52. Hence, the rejection of claims 23, 26, 50 & 52 under 35 USC 103(a) as being unpatentable over Masters in view of Hatura is improper and applicants respectfully request that the rejection be removed.

Paragraph 9 of Office Action

Claims 25 & 51 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 3,972,829), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 above, and in further view of Tsou et al "Tsou" (U.S. Pat. 5,171,644).

Claim 25 depends from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claim 51 depends from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Tsou fails to make up for the deficiencies of Mesters, and the combination of Mesters in view of Tsou fails to teach or suggest all of the limitations of claims 25 & 51. Hence, the rejection of claims 25 & 51 under 35 USC 103(a) as being unpatentable over Mesters in view of Tsou is improper and applicants respectfully request that the rejection be removed.

Claim Rejections - 35 USC 102(b)/103Paragraph 11 of Office Action

Claims 29 & 55 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Mesters (U.S. Pat. 3, 972,829).

Claim 29 depends from claim 1 and includes all of the limitations of claim 1 as well as additional limitations. Claim 55 depends from claim 30 and includes all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Hence, Mesters fails to teach or suggest all of the limitations of claims 29 & 55. The rejection of claims 29 & 55 under 35 USC 102(b) or, in the alternative, under 35 USC 103(a) is improper and applicants respectfully request that the rejection be removed.



Claim Rejections - 35 USC 103Paragraph 12 of Office Action

Claims 90-100 are rejected under 35 USC 103(a) as being unpatentable over Mesters et al, (US Patent 4,725,573) in view of Ovshinsky (US Patent 5,840,440).

Independent claim 90 (as amended) recites:

A catalyst, comprising:

a metal particulate having an average particle size less than about 100 Angstroms, said metal particulate comprising a nickel alloy, said nickel alloy lacking platinum and palladium, said nickel alloy comprising at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe; and

a support

Mesters is directed to a copper-nickel catalyst. Mesters contains no teaching or suggestion of a nickel alloy comprising at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

Ovshinsky 5,840,440 teaches a hydrogen storage alloy containing modifier elements which may be selected from the group consisting of Ni, Cr, Co, Mn, Mo, Nb, Fe, Al, Mg, Cu, Sn, Ag, Zn, Pd (Ovshinsky, Col 6, line 43-48). Ovshinsky

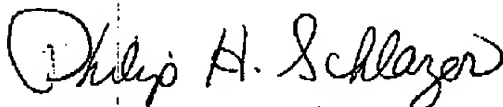
teaches that the hydrogen storage alloy may have a crystallite size of less than about 200 Angstroms, and more particularly less than about 100 Angstrom (see Ovshinsky col 6, line 1-4). However, Ovshinsky provides no teaching or suggestion of a metal particulate having an average particle size of less than about 100 Angstroms. Hence, a rejection of new claim 90 under 35 USC 103 as being unpatentable over Mesters in view of Ovshinsky is not proper and applicants request that the rejection be removed.

Summary

In view of the above remarks and amendments, claims 1, 3-30, 32-55, and 90-100 are in condition for allowance. Applicants respectfully request reconsideration, withdrawal of the outstanding rejections, and notification of allowance.

Should the Examiner have any questions or suggestions regarding the prosecution of this application, she is asked to contact applicants' representative at the telephone number listed below.

Respectfully submitted,



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